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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1W/P0026/WOD	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03090	International filing date (day/month/year) 17/09/1999	Priority date (day/month/year) 02/10/1998
International Patent Classification (IPC) or national classification and IPC H01J40/00		
Applicant THE SECRETARY OF STATE FOR DEFENCE et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18/04/2000	Date of completion of this report 26.06.2000
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/03090

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-7 as originally filed

Claims, No.:

1-10 as originally filed

Drawings, sheets:

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
☒ claims Nos. 10.

because:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03090

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-9
	No:	Claims	-
Inventive step (IS)	Yes:	Claims	1-9
	No:	Claims	-
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	-

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claim 10, in defining its subject-matter vaguely as being substantially described with reference to Fig. 1, does not allow a clear determination of the scope of protection of the claim; and therefore no judgement can be made on novelty or inventive step.

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1) Reference is made to the following document:

D1: FR-A-2 672 996 (FRANCE ETAT ARMEMENT; PROENGINE (FR)) 21 August 1992 (1992-08-21)

2) Document **D1**, which is considered to represent the most relevant state of the art, discloses (cf. Fig. 1 and 2, page 3 line 22 to page 4 line 18; page 5 line 22 to page 7 line 22; claims 1 and 2) a photomultiplier tube circuit, where a dynode high voltage supply is regulated with respect to a dynode voltage sampled by changing the frequency or the pulse amplitude of the oscillator of the high voltage supply.

From this the subject-matter of **claim 1** differs in switching means for switching the oscillator on and off with respect to at least one dynode voltage sampled.

Similarly, the subject-matter of method **claims 8 and 9** differs from the disclosure of **D1** in switching the oscillator on, or off, respectively, when the sampled dynode voltage drops below, or reaches, respectively, a predetermined voltage.

The subject-matter of independent **claims 1, 8, and 9** is therefore novel (Article 33(2) PCT).

3) The problem to be solved by the present invention may be regarded as how to reduce power consumption of the circuit (see paragraph bridging page 1 and 2, and page 2 line 18 of the description).

The solution to this problem proposed in **claim 1** as well as in method **claims 8 and 9** of the present application is considered as involving an inventive step (Article 33(3) PCT) since it is neither disclosed nor rendered obvious in the prior art.

4) **Claims 2 to 6** are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

5) The subject-matter of **claim 7**, which is a radiation monitor comprising a circuit according to any preceding claim, equally meets the requirements of the PCT with respect to novelty and inventive step.

Re Item VII

Certain defects in the international application

1) **Claim 10** contains references to the drawings and the description. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.

2) The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

3) Although claim 1 is drafted in the two-part form the feature that the photomultiplier tube circuit comprises means for sampling the voltage of at least one of the dynodes is incorrectly placed in the characterising portion, as it is disclosed in document **D1** (cf. V.2 above) in combination with the features placed in the preamble (Rule 6.3(b) PCT).

4) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document **D1** is not mentioned in the description, nor is this document identified therein.